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27765	7590	05/16/2008		
NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION				
P.O. BOX 506				
MERRIFIELD, VA 22116				
EXAMINER				
GRAYBILL, DAVID E				
ART UNIT		PAPER NUMBER		
2822				
NOTIFICATION DATE		DELIVERY MODE		
05/16/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/711,567

Applicant(s)

OU ET AL.

Examiner

David E. Graybill

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 20-25 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-8 and 20-25 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 11 March 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date 3-13-8
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

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A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3-11-8 has been entered.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 5, 6 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The scope of the exemplary language "the like" is unclear because the metes and bounds of the language are not defined and cannot otherwise be determined. See MPEP § 2173.05(d).

In the rejections infra, generally, reference labels are recited only for the first recitation of identical claim elements.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-8 and 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Lai (20040261693) and Ishibashi (5923950).

In the abstract, paragraphs 19, 21, 22 and claims 6, 7, 9 and 10, Lai discloses the following:

Re claim 1: A method for manufacturing a ternary nitride-based buffer layer of a nitride-based light-emitting device, comprising the steps of: providing a substrate 10; introducing a first reaction source "trimethyl aluminum" comprising a first group III element at a first temperature "200 degree C. to 800 degree C.", wherein the first group III element is deposited on the substrate; and introducing a second reaction source "trimethyl gallium" comprising a second group III element and a third reaction source

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NH₃ comprising nitrogen at a second temperature "800 degree C. to 1100 degree C.", where the first temperature is different from the second temperature.

Re claim 2: The method of claim 1, wherein the substrate comprises at least a material selected from the group consisting of sapphire, GaN, AlN, SiC, GaAs, GaP, Si, ZnO, MgO, MgAl₂O₄, glass, and the like "single crystal silicon or silicon carbon".

Re claim 3: The method of claim 1, wherein the first temperature is 500°C or above.

Re claim 4: The method of claim 1, wherein the second temperature is 700°C or above.

Re claim 5: The method of claim 1, wherein the first group III element comprises at least a material selected from the group consisting of Al, Ga, In, and the like.

Re claim 6: The method of claim 1, wherein the second group III element comprises at least a material selected from the group consisting of Al, Ga, In, and the like.

Re claim 8: The method of claim 1, wherein the ternary nitride-based buffer layer comprises at least a material selected from the group consisting of InGa₂N, AlGa₂N, InAlN, and the like.

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Re claim 20: The method of claim 1, wherein the melting point of the first group III element is lower than the first temperature.

Re claim 21: The method of claim 1, wherein the second temperature is not lower than the melting point of the first group III element.

Re claim 22: A method for manufacturing a ternary nitride-based buffer layer of a nitride-based light-emitting device, comprising the steps of: providing a substrate; introducing a first reaction source comprising a first group III element, wherein the first group III element is deposited on the substrate; and, introducing a second reaction source comprising a second group III element and a third reaction source comprising nitrogen into the chamber.

Re claim 23: The method of claim 22, wherein the temperature of the step for introducing the first reaction source into the chamber is different from the temperature of the step for introducing the second reaction source and the third reaction source into the chamber.

Re claim 24: The method of claim 23, wherein the melting point of the first group III element is lower than the temperature of introducing the first reaction source into the chamber.

Re claim 25: The method of claim 23, wherein the temperature of introducing the second reaction source and the third reaction source into the chamber is not lower than the melting point of the first group III element.

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However, Lai does not appear to explicitly disclose the following:

Re claim 1: for forming a ternary nitride-based buffer layer with the first group III element on the substrate.

Re claim 22: to react with the first group III element on the substrate for forming a ternary nitride-based buffer layer.

Re claim 7: The method of claim 1, wherein the ternary nitride-based buffer layer thickness is between 1nm and 500nm.

Nevertheless, these limitations are merely statements of intended use of the process which do not appear to result in a manipulative difference as compared to the process of Lai. Furthermore, because the process of Lai appears to be inherently capable of being used for the same intended use, the statement of intended use does not patentably distinguish the claimed process from the process of Lai. To further clarify, the antecedent basis for the language, "the ternary nitride-based buffer layer" is the intended use language, "for forming a ternary nitride-based buffer layer," therefore, the language, "the ternary nitride-based buffer layer thickness is between 1nm and 500nm," merely further modifies the statement of intended use of the process.

Also, Lai does not appear to explicitly disclose the following:

Re claim 22: subsequent to introducing the first reaction source.

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Nonetheless, as reasoned from well established legal precedent, it would have been an obvious matter of design choice bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization to choose the particular claimed sequence because applicant has not disclosed that, in view of the applied prior art, the limitation is for a particular unobvious purpose, produces an unexpected result, or is otherwise critical. Moreover, it is well established that, in a well known process, the order of performing process steps is prima facie obvious in the absence of new and unexpected results. See *In re Burhans*, 154 F.2d 690, 69 USPQ 330 (CCPA 1946); *Ex parte Rubin*, 128 USPQ 440 (Bd. App. 1959); *In re Gibson*, 39 F.2d 975, 5 USPQ 230 (CCPA 1930).

However, Lai does not appear to explicitly disclose the following:

Re claim 1: into a chamber, into the chamber.

Re claim 22: into a chamber.

Notwithstanding, at column 7, lines 22-21; and column 7, lines 35-48, Ishibashi discloses introducing reaction sources into a chamber "furnace." Moreover, it would have been obvious to combine this disclosure of Ishibashi with the disclosure of Lai because it would facilitate the process of Lai.

Applicant's amendment and remarks filed 3-11-8 have been fully considered and are adequately treated supra.

For information on the status of this application applicant should check PAIR:

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alternatively, applicant may contact the File Information Unit at (703) 308-2733. Telephone status inquiries should not be directed to the examiner. See MPEP 1730VIC, MPEP 203.08 and MPEP 102.

Any other telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (571) 272-1930. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.
The fax phone number for group 2800 is (571) 273-8300.

/David E Graybill/
Primary Examiner, Art Unit 2822